

## **SPECIFICATION**

### **TITLE OF INVENTION**

Title of invention: Friction Grip Fireplace Tool

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### **CROSS REFERENCES TO RELATED APPLICATIONS**

Not applicable

### **STATEMENT REGARDING FEDERALLY SPONSORED R & D**

Not applicable

### **REFERENCE TO SEQUENCE LISTING, A TABLE, OR COMPUTER PROGRAM LISTING APPENDIX**

Not applicable

### **BACKGROUND OF THE INVENTION**

[0001] This invention relates to log handling tools for a fireplace. It is a unique tool, different from conventional fireplace tools such as tongs, hooks, or pokers. Each of these have their limitations in moving about a burning log and cause the user some difficulty. Tongs require moving parts that must be manipulated by the user to acquire and retain a grip while at the same time exerting force with both hands to lift and move the log. They are difficult to get between burning logs, and do not provide the user adequate leverage to lift a heavy log. Hooks are difficult to get between logs and have no mechanism to grip the log. They work best only in a pulling motion, making it difficult for the user to move a log rearward or upward in a fireplace. Conventional wedge or pointed tipped pokers only allow a log to be pushed about but not lifted.

[0002] Various types of log handling tools are known in the prior art. A typical example of such a log handling tool is to be found in U.S. Pat. No. 3,042,438, issued to J. Turner on July 3, 1962. This patent discloses a fireplace tool including an elongated metal rod having a transverse leg at one end for manipulating a fireplace log. U.S. Pat. No. 3,310,331 issued to H. Michaud on Mar. 12, 1967, discloses a U-shaped hook having a D ring type handle for manipulating a log. U.S. Pat. No. 3,574,380, issued to R. Tague on Apr. 13, 1971, discloses a fireplace log handling tool including two separate arms, each of which is manipulated by a user to engage opposite end faces of a log. Each of the arms terminates in a transverse leg having a pointed tip. U.S. Pat. No. 4,560,194 issued to T. Rybeck on Dec. 24, 1985, discloses a log handling tool for mounting upon an axe-type handle. The tool includes a laterally extending hook member having an offset tip portion. U.S. Pat. No. 4,773,686, issued to H. Michaud on Sept. 27, 1988, discloses a wood handling hook having a tip including a set of flutes forming shoulders to enhance engagement of a log. U.S. Pat. No. 4,955,647 issued to H. Alfredson on Sept. 11, 1990 discloses a log handling hook bent a 90 degrees. None of these devices uses the spring effect in an open-jawed mouth, and friction ridges within the mouth, to grip and lift a log, as does the current invention.

#### BRIEF SUMMARY OF THE INVENTION

[0003] This invention overcomes problems of the prior art by allowing the user to completely lift and move about a burning log easily in any direction with adequate leverage. The log is held by the spring effect of an open-jawed mouth, lined with friction ridges, on the end of a long sturdy rod. The tool is easy to use and has no moving parts. A user can grip a log with a single pushing motion, then lift and move the log in any direction without any need to manipulate moving parts or apply any force to retain the grip.

[0004] In view of known disadvantages in other types of log handling tools, this invention provides a substantial advancement in fireplace tools. When properly

used, the open mouth is pressed onto a burning log. The elasticity of the rod material allows the mouth to be forced open as it is pushed onto the log. The spring effect of the mouth, along with friction ridges inside the mouth, create friction sufficient to firmly grip a log, which may then be lifted, moved about in the fireplace, or completely removed from a fireplace. Unlike hooks, tongs, and conventional pokers, this tool provides adequate leverage and grip on the log, and is easy to insert between logs. This tool may also be used to very quickly grip and lift a burning log that rolls out of a fireplace. No other tool exists to handle this very difficult and urgent task.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

- [0005] Figure 1 shows one construction of the invention, with examples of representative dimensions. The dimensions shown on the figure are those of the prototype that has been built and tested successfully. Other dimensions may be equally effective for other constructions. Details such as the shape of the hand grip at the upper end of the tool, the method of attachment of the hand grip, the method of construction of the open-jawed mouth, or the method of attachment of the mouth may vary from Figure 1. This figure is not drawn to scale.
- [0006] Figures 2 through 5 show examples of 4 constructions of the open-jawed mouth. Other constructions may vary from these figures.
- [0007] Figures 6 through 8 show examples of 3 constructions of the hand grip. Other constructions may vary from these figures.
- [0008] Figures 9 through 12 illustrate how the invention can be used to move a log in a fireplace. The process illustrated moves from left to right (Figure 9 to Figure 12). The numerical labels (1 through 7) serve as references for the textual description of the process given in the Detailed Description. The broad arrows illustrate directions of motions and forces. The fire grate and logs are not part of the invention.

## DETAILED DESCRIPTION

[0009] My invention is a fireplace tool to be used to re-position, rotate, or completely lift and handle burning logs. A burning log is lifted and re-positioned with this tool by placing the open-jawed mouth end of the tool near the center of the log and pushing the mouth firmly against the log so that the log is wedged into the mouth and the friction ridges bite into the wood. The  $\frac{1}{4}$  round,  $\frac{1}{2}$  round, or whole round log is held by friction created by the spring effect and friction ridges in the mouth of the tool. Tapping the mouth of the tool against another log, the firebox, grate, dog-irons, or any other solid object in the fireplace releases the log into position.

[00010] Figures 9 through 12 illustrate an example of use of the tool. The sequential numbering of the following description corresponds to the numbers shown in these figures.

1. The pointed tip of the jaw is pushed under the log to be lifted.
2. The jaw is pushed onto the log.
3. The force of the push causes the jaw to open in a manner consistent with the elasticity of the tool material (e.g., steel). The force resisting the opening of the jaw creates gripping force on the log, and the ridges within the jaw enhance the grip, preventing the log from slipping out the end of the jaw.
4. The grip of the tool on the log allows the log to be lifted and moved freely.
5. The log is moved to a new position in the fireplace.
6. The pointed tip of the jaw is tapped against an object in the fireplace to cause the jaw to release the log.
7. The log is released into the new position.

[00011] Although there are other tools to stir fires or lift logs such as conventional pokers and tongs, this tool is unique in that it uses no moving parts to grip and completely lift a burning log. No other tool uses friction ridges that are forced into the wood by the spring action created by the open-jawed mouth and the elasticity of the mouth material.

[00012] This tool can be made of one solid piece with a hand grip on one end, and on the other end the open-jawed mouth. In this one-piece construction of the tool,

the open-jawed mouth is formed by a double bend in the rod (see Figure 1). The first bend turns the end of the rod back toward the handle grip 180 degrees or parallel to the rod. The second bend turns the rod end at an angle from parallel to the rod. In the construction of the invention (a working prototype) shown in Figure 1, that angle is 22 degrees. The most effective angle for a given construction will depend on the tool material used, the size of the rod, and the size of the mouth opening, which may be varied for different constructions. The construction of the tool shown in Figure 1 is made of a single piece of steel, metal or other material having appropriate elasticity (similar to steel) and properties to withstand the heat of a fire. Around the inner perimeter of the mouth of the tool are a series of ridges, the spacing of which may vary with different constructions. On the working prototype, the ridges are spaced approximately  $\frac{1}{4}$  inch apart. These ridges, along with the spring effect of the mouth create the necessary friction to grip and lift logs.

[00013] In a one-piece construction of the tool, the exact location of the bends can be altered to change the size of the mouth opening. Using a prototype construction of the tool, I have found that the dimensions shown in Figure 1 create a mouth opening that is a good size to lift logs of various sizes. The tip of the tool extends about 2 inches past the first bend and serves as a wedge to get between logs.

[00014] The tool can also be fabricated in a variety of ways from multiple parts. See Figures 2 through 5 for examples of constructions of the open-jawed mouth end of the tool and Figures 6 through 8 for example constructions of the hand grip end. A hand grip of wood, brass, or other material may be used.